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FLOOD PLAIN CRITERIA

**A Policy Statement of
the Government of Ontario
on Planning for Flood Plain Lands**



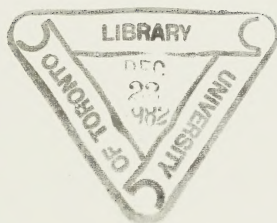
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FLOOD PLAIN CRITERIA

**A Policy Statement of
the Government of Ontario
on Planning for Flood Plain Lands**

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This is not a policy statement under the new Planning Act. Upon the adoption of the new Planning Act, this Statement of Government Policy is intended to be reaffirmed under the legislation

FLOOD PLAIN CRITERIA

A Policy Statement of the Government of Ontario on Planning for Flood Plain Lands



Ontario

Ministry of
Natural
Resources

Hon. Alan W. Pope
Minister
W. T. Foster
Deputy Minister



Ontario

Ministry of
Municipal Affairs
and Housing

Hon. Claude Bennett
Minister
W. Corneli
Deputy Minister

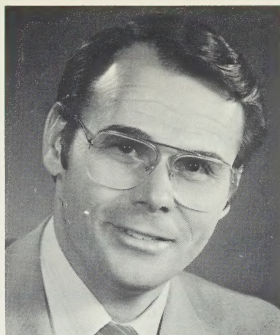


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Honourable Alan W. Pope

Minister of Natural Resources



Honourable Claude Bennett

Minister of Municipal Affairs and Housing

September 1982

The Government of Ontario is pleased to provide these flood plain criteria and supporting policies to be used as the basis for implementing flood plain management in the Province.

The Ministries of Natural Resources and Municipal Affairs and Housing conducted a comprehensive review of the flood plain criteria and in 1977 released a Discussion Paper on Flood Plain Management Alternatives in Ontario. The review process and the comments received from municipalities, individuals and groups interested in flood plain management have led to the development of the Provincial Flood Plain Criteria, which are now being released as a part of the statement of Government Policy.

The criteria represent the minimum level of flood protection to be provided to the citizens of the Province. They are designed to provide the provincial ministries, municipalities, conservation authorities, the private sector and the members of the general public with the approved framework for flood plain management in Ontario.

A stylized, handwritten signature of Alan W. Pope in black ink.

Alan W. Pope

A stylized, handwritten signature of Claude Bennett in black ink.

Claude Bennett

OBJECTIVES AND POLICY PRINCIPLES FOR FLOOD PLAIN MANAGEMENT

THE OBJECTIVES OF FLOOD PLAIN MANAGEMENT ARE:

- (1) TO PREVENT LOSS OF LIFE.
- (2) TO MINIMIZE PROPERTY DAMAGE AND SOCIAL DISRUPTION.
- (3) TO ENCOURAGE A CO-ORDINATED APPROACH TO THE USE OF LAND AND MANAGEMENT OF WATER.

THE FOLLOWING PRINCIPLES WERE THE BASIS FOR DEVELOPMENT OF THE PROVINCIAL POLICIES AND ARE TO BE APPLIED TO ACCOMPLISH THE OBJECTIVES OF FLOOD PLAIN MANAGEMENT:

- (1) FLOOD PLAIN MANAGEMENT POLICIES MUST BE BASED ON AN EVALUATION OF ALL RELEVANT SOCIAL, ECONOMIC, PHYSICAL AND ENVIRONMENTAL FACTORS.
- (2) FLOOD PLAIN MANAGEMENT POLICIES MUST TAKE PLACE WITHIN AN OVERALL, CO-ORDINATED LAND USE AND WATERSHED PLANNING FRAMEWORK.
- (3) WHENEVER FEASIBLE, EXISTING DEVELOPMENTS WITHIN THE FLOOD PLAIN ARE TO BE PROTECTED AGAINST MAJOR FLOOD LOSSES.
- (4) FUTURE LAND USES WHICH WILL BE SUSCEPTIBLE TO SIGNIFICANT FLOOD DAMAGES OR WHICH WILL INCREASE FLOOD DAMAGES TO EXISTING USES MUST NOT BE PERMITTED WITHIN THE FLOOD PLAIN.
- (5) FLOOD PLAIN MANAGEMENT POLICIES MUST BE DEVELOPED AND ADMINISTERED IN A MANNER WHICH PROMOTES PUBLIC UNDERSTANDING AND ACCEPTANCE.

POLICY NO. 1

THE REGULATORY FLOOD FOR DESIGNATION OF FLOOD PLAINS IN ONTARIO IS DEFINED AS THE REGIONAL FLOOD OR THE 100-YEAR FLOOD, WHICHEVER IS GREATER.

(The geographical definition of the Regulatory Floods is contained in Fig. 1)

POLICY NO. 2

CONSERVATION AUTHORITIES IN ONTARIO, OR WHERE NO AUTHORITY EXISTS, THE MINISTRY OF NATURAL RESOURCES, IN CO-OPERATION WITH THE WATERSHED MUNICIPALITIES, HAVE THE OPTION OF SELECTIVE APPLICATION OF THE TWO-ZONE FLOODWAY-FLOOD FRINGE CONCEPT;
(Fig. 2 contains the description of this concept)

THOSE AREAS WHERE THE TWO-ZONE CONCEPT IS ADOPTED;

DEVELOPMENT IN THE FLOOD FRINGE IS TO BE PROTECTED TO THE LEVEL OF THE REGULATORY FLOOD BY SUITABLE FLOOD DAMAGE REDUCTION MEASURES.

THE FLOODWAY IS TO BE BASED ON THE MINIMUM OF THE 100-YEAR FLOOD FOR

POLICY NO. 3

WHERE STRICT APPLICATION OF POLICIES 1 AND/OR 2 IS NOT FEASIBLE, THE CONCEPT OF SPECIAL POLICY AREAS WITHIN FLOOD PLAINS IS RECOGNIZED AND CONTROLLED DEVELOPMENT MAY BE PERMITTED, ONCE SUCH AREAS ARE DESIGNATED AND APPROVED BY THE CONSERVATION AUTHORITY AND THE MINISTRIES OF NATURAL RESOURCES AND MUNICIPAL AFFAIRS AND HOUSING. THE MINISTRIES OF THE ENVIRON-

MENT AND NORTHERN AFFAIRS, WHEN APPROPRIATE, ARE TO BE CONSULTED ABOUT THE SPECIAL POLICY STATUS FOR SUCH AREAS.

POLICY NO. 4

CONSERVATION AUTHORITIES ARE TO CONTINUE TO ADMINISTER FILL AND CONSTRUCTION REGULATIONS, IN ACCORDANCE WITH THE CONSERVATION AUTHORITIES ACT;

COMPLY WITH THE OBJECTIVES OF FLOOD PLAIN MANAGEMENT, AND ACCORD WITH THE PROCEDURAL POLICIES ESTABLISHED BY THE CONSERVATION AUTHORITY AND THE MINISTRIES OF NATURAL RESOURCES AND MUNICIPAL AFFAIRS AND HOUSING.

CONSTRUCTION REGULATIONS* MADE UNDER THE CONSERVATION AUTHORITIES ACT MAY BE RESCINDED FOR THOSE AREAS WHERE A MUNICIPALITY HAS ADOPTED OFFICIAL PLAN POLICIES AND ZONING BY-LAWS WHICH

*Section 28 (1) (e), Conservation Authorities Act, R.S.O. 1980, Ch. 85

THE REGULATORY FLOOD

- ZONES 1 & 3 — The greater of the Regional Flood or the 100-Year Flood. (see appendix A)
- ZONE 2 — The 100-Year Flood.
- Approximate boundaries of the Regulatory Floods

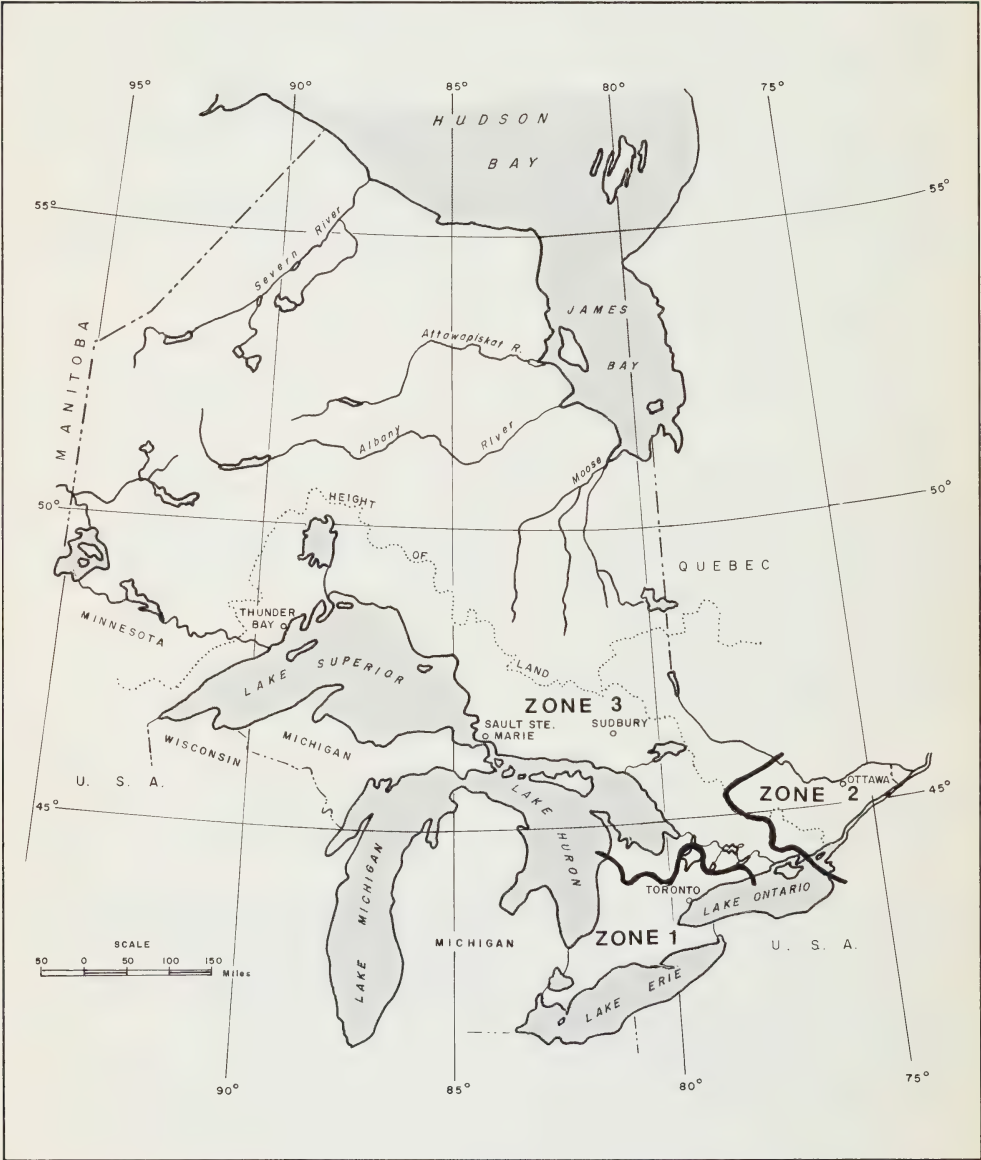


FIG. 1

THE TWO-ZONE FLOODWAY-FLOOD FRINGE CONCEPT

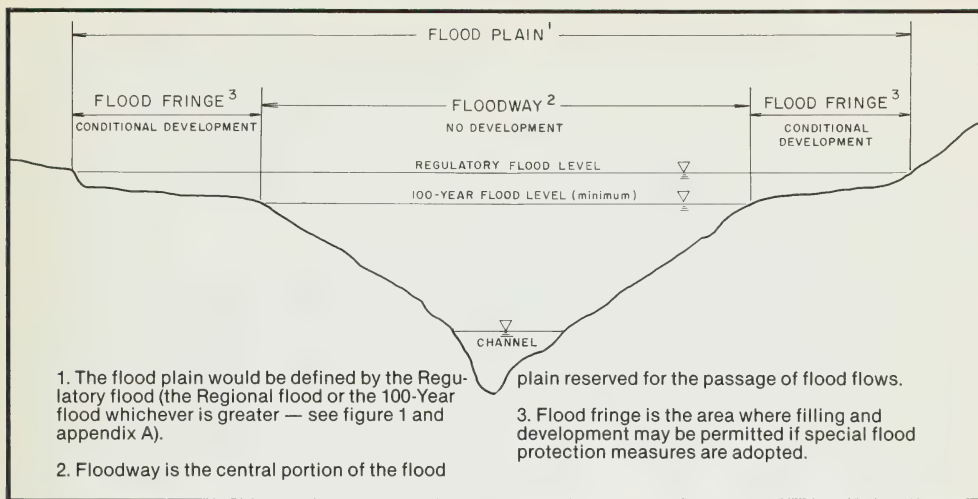


FIG. 2

POLICY NO. 5

THE MINISTRY OF NATURAL RESOURCES WILL PROVIDE DETAILED POLICIES AND TECHNICAL GUIDELINES FOR THE CALCULATION AND MAPPING OF FLOODWAY AND FLOOD PLAIN LANDS;

THE MINISTRY OF MUNICIPAL AFFAIRS AND HOUSING, IN CO-OPERATION WITH THE MINISTRY OF NATURAL RESOURCES, WILL DEVELOP POLICIES AND PROCEDURES FOR THE ADMINISTRATION OF THE PLANNING ACT, AS IT RELATES TO FLOOD PLAIN LANDS, TO COMPLY

WITH THE OBJECTIVES OF FLOOD PLAIN MANAGEMENT;

THE MINISTRIES OF NATURAL RESOURCES AND MUNICIPAL AFFAIRS AND HOUSING, IN CO-OPERATION WITH CONSERVATION AUTHORITIES, WILL DEVELOP TECHNICAL CRITERIA AND PROCEDURES FOR THE SELECTIVE APPLICATION OF THE TWO-ZONE FLOODWAY-FLOOD FRINGE CONCEPT AND FOR THE DESIGNATION OF "SPECIAL POLICY AREAS".

POLICY NO. 6

LOCAL MUNICIPALITIES HAVE JURISDICTION FOR URBAN STORMWATER MANAGEMENT IN DRAINAGE AREAS OF LESS THAN 125 ha, AND THESE DRAINAGE AREAS ARE EXEMPT FROM CONSTRUCTION REGULATIONS* MADE UNDER THE CONSERVATION AUTHORITIES ACT;

CONSERVATION AUTHORITIES WILL DELEGATE JURISDICTION FOR URBAN STORMWATER MANAGEMENT OVER LARGER WATERSHEDS, REGARDLESS OF SIZE, TO LOCAL MUNICIPALITIES ONCE THE MUNICIPALITIES ADOPT STORMWATER MANAGEMENT PLANS WHICH COMPLY WITH THE OBJECTIVES OF FLOOD

PLAIN MANAGEMENT, AND ACCORD WITH THE PROCEDURAL POLICIES ESTABLISHED BY CONSERVATION AUTHORITIES AND THE MINISTRIES OF NATURAL RESOURCES, MUNICIPAL AFFAIRS AND HOUSING AND THE ENVIRONMENT;

THE MINISTRIES OF NATURAL RESOURCES, MUNICIPAL AFFAIRS AND HOUSING, AND THE ENVIRONMENT, IN CO-OPERATION WITH CONSERVATION AUTHORITIES, WILL DEVELOP POLICIES, TECHNICAL GUIDELINES AND PROCEDURES FOR THE PREPARATION AND APPROVAL OF STORMWATER MANAGEMENT PLANS.

*Sec. 28 (1) (e), Conservation Authorities Act, R.S.O. 1980, Ch. 85



Township of Field, 1979

The objectives of flood plain management policies are to prevent loss of life, minimize property damage and social disruption arising out of floods and to encourage a co-ordinated approach to the use of land and management of water.

The need for government policies for management of flood plain lands is identified for the following reasons:

- 1 to protect society, including all levels of Government, from being forced to bear unreasonable social and economic burden of unwise individual choices;
- 2 to provide order, consistency, economy and equity in the flood plain management program;
- 3 to provide individuals with a simpler means of dealing with complex technical matters.

In order to accomplish the objectives, the strategy used in Ontario consists of a combination of four components:

- (i) Structural methods of flood control;
- (ii) Flood warning system;
- (iii) Disaster relief; and
- (iv) Regulation of land use.

(i) Structural Methods of Flood Control

The structural approach involves the construction of dams, dykes, channels, diversions and other flood control works.

These works are usually designed to provide protection to existing communities which are historically located within the flood plain. This is usually the most costly approach.

In Ontario, during the past 30 years, the Federal, Provincial and local levels of government have expended large sums of money on remedial measures, with the major share of the cost being borne by the Provincial Government.

WATER CONTROL PROJECTS IN ONTARIO	
EXPENDITURE* (1946-1978)	
PROVINCIAL GOVERNMENT	\$150 MILLION
LOCAL GOVERNMENT	80 MILLION
FEDERAL GOVERNMENT	20 MILLION
	\$250 MILLION
* Does not include disaster relief.	

TABLE 1



Brampton, Main Street, 1948

(ii) Flood Warning System

The Ministry of Natural Resources maintains a streamflow forecast centre which is linked to a network of weather stations, stream gauges and rain gauges throughout the province. Advance warning of an impending flood enables municipalities, conservation authorities and the provincial ministries to put into operation their emergency action plans by evacuating people and movable property from flood-susceptible areas.

Although this approach assists in reducing some losses, it does not prevent flooding nor does it provide meaningful reduction of flood damage to permanent buildings and immovable property.



Flood Damage, Port Hope, 1980

(iii) Disaster Relief

The three levels of government have historically provided disaster relief and assistance to flood victims after major flood events. More recent examples of communities receiving disaster relief include Cambridge, Field, Dover Township and the Town of Port Hope.

Disaster relief does not compensate victims for all losses and disruption, because government subsidies traditionally have not covered total damages and because flood insurance on private properties in flood-risk areas is not readily available at economical rates. More importantly, this approach does not prevent the disasters from occurring again.



Regulation of Land Use, Metropolitan Toronto Area

The structural, flood warning and disaster relief approaches are essentially a subsidy from all taxpayers to the flood plain users.

(iv) Regulation of Land Use

The most equitable and cost-effective approach is through orderly land use planning of communities to ensure that buildings are located outside the flood-risk area.

The Province of Ontario has enabling legislation which empowers municipalities, conservation authorities and provincial ministries to prohibit or regulate development in areas which would be vulnerable to flood damage.

The Ministry of Natural Resources, through the administration of The Conservation Authorities Act and in co-operation with Ontario's Conservation Authorities, has traditionally played the foremost role in the management of flood plains. The Ministry and the authorities also act in an advisory capacity to the Ministry of Municipal Affairs and Housing, in the administration of The Planning Act, on matters which relate to flooding and other physical hazards.



Concrete Channel, Black Creek

BACKGROUND

Land use planning recognizes flood-susceptibility before development proceeds and is favoured because it prevents the problem from occurring, rather than dealing with it after the fact.

The cornerstone of the flood plain management policy is the selection of the degree of risk to life and property that is acceptable to society. In practice, this means that before overall flood plain policies can be established, three fundamental questions need to be answered:

- 1 *How severe a flood should the citizens of Ontario be protected against?*
- 2 *Should varying degrees of risk of damage across the individual flood plains be recognized?*
- 3 *What should the approach be to deal with "Special Cases" where a community has historically developed in the flood plain?*

A number of optional responses to each of these questions were formulated and evaluated during the development of the flood plain policies. The primary factors considered in the evaluation process included probability of occurrence of floods, size of the flood plains and amount of flood damages which would be expected to occur.

The Statement of Provincial Policy contained in this document defines the level of protection, provides an opportunity for flexibility in the management of flood plain lands and recognizes special circumstances where strict application of the stated policies may not be in the public interest.



Claireville Dam, Humber River

EXPLANATION

POLICY NO. 1:

THE REGULATORY FLOOD FOR DESIGNATION OF FLOOD PLAINS IN ONTARIO IS DEFINED AS THE REGIONAL FLOOD OR THE 100-YEAR FLOOD, WHICHEVER IS GREATER.

This policy defines the level of flood protection which should be provided to the citizens of Ontario. The flood against which protection is to be provided and on the basis of which flood plains are to be delineated is referred to as the "Regulatory Flood".

The magnitude of the "Regulatory Flood" in a particular area of the Province is largely dependent upon the susceptibility of that area to tropical storms, thunderstorms, snowmelt, rainfall or a combination of these weather-related events. Figure 1 shows the areas of the Province, subdivided into zones, with the applicable "Regulatory Flood" criteria. The peak flow generated by the Regional Storm is referred to as the "Regional Flood". Appendix A provides detailed information on rainfall for the Regional storm events applicable to zones 1 and 3.

For the purpose of determination of the Regulatory Flood, calculations for runoff are based on ultimate planned development (mature state land uses) of the watershed. In addition, degree of soil wetness under average conditions (average antecedent soil moisture conditions) are to be assumed.

The 100-year Flood would be determined by analysis of frequency of recorded flood peaks and would have the probability of occurrence of one per cent during any one year. In the absence of recorded information of natural flood events, it is to be assumed that precipitation with a probability of occurrence of one per cent during any one year would generate the 100-year Flood.

In cases where long-term streamflow records are not available, where flows may be modified by reservoirs, or where ice jams may produce localized flooding, the level of flood protection will be defined as:

- (i) a specified rate of flow, or
- (ii) a flood which would produce defined flood levels at given locations.

In these cases, the level of flood protection will be specified by the Conservation Authority and the Ministry of Natural Resources and will be provided to municipalities and interested agencies.



Encroachment in flood plain Grand River at Cambridge (Galt)



Cambridge (Galt), 1974

POLICY NO. 2:

CONSERVATION AUTHORITIES IN ONTARIO, OR WHERE NO AUTHORITY EXISTS, THE MINISTRY OF NATURAL RESOURCES, IN CO-OPERATION WITH THE WATERSHED MUNICIPALITIES, HAVE THE OPTION OF SELECTIVE APPLICATION OF THE TWO-ZONE FLOODWAY-FLOOD FRINGE CONCEPT;

(Fig. 2 contains the description of this concept)

THE FLOODWAY IS TO BE BASED ON THE MINIMUM OF THE 100-YEAR FLOOD FOR THOSE AREAS WHERE THE TWO-ZONE CONCEPT IS ADOPTED;

DEVELOPMENT IN THE FLOOD FRINGE IS TO BE PROTECTED TO THE LEVEL OF THE REGULATORY FLOOD BY SUITABLE FLOOD DAMAGE REDUCTION MEASURES.

This policy recognizes that varying degrees of risk of damage exist across individual flood plains.

The two-zone concept (Figure 2) is the concept whereby the flood plain is divided into two zones, namely: the floodway and the flood fringe. The floodway is the central portion closest to the watercourse where risk of flood damage is the highest. The policy requires that the floodway include at least those lands which would be flooded by the 100-year Flood, and that no structural development be permitted within this area. The flood fringe is the area beyond the floodway, and includes the remaining lands susceptible to the Regulatory Flood. Development in the flood fringe would be permitted provided that suitable flood damage reduction measures are undertaken, to provide protection against the Regulatory Flood. Flood damage reduction measures include filling or raising of structures, structural modifications and operation and maintenance safeguards such as reinforcing of walls, permanent sealing of exterior openings, elevation of structures and utilities, installation of sump pumps, etc.

The feasibility of applying this concept to specific flood plains is dependent upon physical conditions and land uses, both existing and proposed. Local environmental concerns may also dictate that it may not be desirable to encourage development in the flood fringe areas along certain reaches of the river. General encroachment within the flood fringe can also increase the Regulatory Flood levels along the river and may increase risk of damage to existing users.

The policy provides the flexibility to the Conservation Authorities and the Municipalities to apply this concept selectively through the appropriate land use planning mechanisms, i.e. Official Plans and Zoning By-Laws.

This policy represents a compromise approach between the higher level of protection provided to all uses by the more-restrictive single-zone Regulatory Flood standard and the improved development potential, with greater risk of flood damage, resulting from a single-zone 100-year Flood standard.

The flexibility provided by this policy can be utilized in Zones 1 and 3 (fig. 1) where the Regulatory Flood is greater than the 100-year Flood.

POLICY NO. 3:

WHERE STRICT APPLICATION OF POLICIES 1 AND/OR 2 IS NOT FEASIBLE, THE CONCEPT OF THE SPECIAL POLICY AREAS WITHIN FLOOD PLAINS IS RECOGNIZED AND CONTROLLED DEVELOPMENT MAY BE PERMITTED, ONCE SUCH AREAS ARE DESIGNATED AND APPROVED BY THE CONSERVATION AUTHORITY AND THE MINISTRIES OF NATURAL RESOURCES AND MUNICIPAL AFFAIRS AND HOUSING. THE MINISTRIES OF THE ENVIRONMENT AND NORTHERN AFFAIRS, WHEN APPROPRIATE, ARE TO BE CONSULTED ABOUT THE SPECIAL POLICY STATUS FOR SUCH AREAS.

It is acknowledged that the strict application of the basic policies 1 and 2 may not always be feasible. This policy makes provision for "Special Policy" status to those areas where it is deemed necessary in the public interest, by the municipalities, conservation authorities and the Province, to assume a higher degree of flood risk than that which would normally be acceptable elsewhere in Ontario.

(i) Existing Areas of Development

These include cases where a large component of a community's commercial, retail, industrial or even residential development is located in the flood plain. Rehabilitation, redevelopment or replacement of structures in such areas are seen as necessary to continued community viability and major relocations are not considered feasible. Many of such areas may be located in the floodway or where floodproofing within the fringe area to the Regulatory Flood standards is not feasible.

(ii) Extensions to Developed Areas

These include areas of major infilling and new development adjacent to existing development (generally where a large percentage of the municipality is located in the flood plain but, due to topography, can only expect shallow flooding with low velocity of flow).

The designation of Special Policy Areas is intended primarily for dealing with existing exceptional situations.

Where Special Policy Areas have been designated and approved by the Province, the modified level of flood protection will be defined as:

(a) *a specified rate of flow, or*

(b) *a flood which would produce defined flood levels at given locations,*

and will be specified and provided by the Conservation Authority and the Ministry of Natural Resources to municipalities and interested agencies.

Request for designation of Special Policy Areas would originate from a municipality. Details regarding the procedure for designation of Special Policy Areas have been developed by the Ministries of Natural Resources and Municipal Affairs and Housing, in co-operation with the Conservation Authorities.

POLICY NO. 4:

CONSERVATION AUTHORITIES ARE TO CONTINUE TO ADMINISTER FILL AND CONSTRUCTION REGULATIONS,* IN ACCORDANCE WITH THE CONSERVATION AUTHORITIES ACT;

CONSTRUCTION REGULATIONS* MADE UNDER THE CONSERVATION AUTHORITIES ACT MAY BE RESCINDED FOR THOSE AREAS WHERE A MUNICIPALITY HAS ADOPTED OFFICIAL PLAN POLICIES AND ZONING BY-LAWS WHICH COMPLY WITH THE OBJECTIVES OF FLOOD PLAIN MANAGEMENT, AND ACCORD WITH THE PROCEDURAL POLICIES ESTABLISHED BY THE CONSERVATION AUTHORITY AND THE MINISTRIES OF NATURAL RESOURCES AND MUNICIPAL AFFAIRS AND HOUSING.

This policy re-affirms the role of Conservation Authorities in the administration of Fill and Construction Regulations made under The Conservation Authorities Act. It also provides municipalities with the basis for requesting the Province to rescind Construction Regulations for those areas where Official Plan policies and Zoning By-laws have been enacted, which comply with the objectives of flood plain management. Official Plan policies and Zoning By-laws, as they relate to flood plain lands, will be prepared by the municipality in consultation with the Conservation Authority and the Ministries of Natural Resources and Municipal Affairs and Housing. Normal review and appeal procedures defined under The Planning Act will apply.

POLICY NO. 5:

THE MINISTRY OF NATURAL RESOURCES WILL PROVIDE DETAILED POLICIES AND TECHNICAL GUIDELINES FOR THE CALCULATION AND MAPPING OF FLOODWAY AND FLOOD PLAIN LANDS;

THE MINISTRY OF MUNICIPAL AFFAIRS AND HOUSING, IN CO-OPERATION WITH THE MINISTRY OF NATURAL RESOURCES, WILL DEVELOP POLICIES AND PROCEDURES FOR THE ADMINISTRATION OF THE PLANNING ACT, AS IT RELATES TO FLOOD PLAIN LANDS, TO COMPLY WITH THE OBJECTIVES OF FLOOD PLAIN MANAGEMENT;

THE MINISTRIES OF NATURAL RESOURCES AND MUNICIPAL AFFAIRS AND HOUSING, IN CO-OPERATION WITH CONSERVATION AUTHORITIES, WILL DEVELOP TECHNICAL CRITERIA AND PROCEDURES FOR THE SELECTIVE APPLICATION OF THE TWO-ZONE FLOODWAY-FLOOD FRINGE CONCEPT AND FOR THE DESIGNATION OF "SPECIAL POLICY AREAS".

This policy is a Provincial Government directive to the Ministries of Natural Resources and Municipal Affairs and Housing to develop the necessary implementation procedures to achieve the desired level of flood protection and to encourage a co-ordinated approach to the use of land and management of water. The necessary implementation procedures have been developed by the two Ministries, in co-operation with Conservation Authorities.

POLICY NO. 6:

LOCAL MUNICIPALITIES HAVE JURISDICTION FOR URBAN STORMWATER MANAGEMENT IN DRAINAGE AREAS OF LESS THAN 125 ha, AND THESE DRAINAGE AREAS ARE EXEMPT FROM CONSTRUCTION REGULATIONS* MADE UNDER THE CONSERVATION AUTHORITIES ACT;

CONSERVATION AUTHORITIES WILL DELEGATE JURISDICTION FOR URBAN STORMWATER MANAGEMENT OVER LARGER WATERSHEDS, REGARDLESS OF SIZE, TO LOCAL MUNICIPALITIES ONCE THE MUNICIPALITIES ADOPT STORMWATER MANAGEMENT PLANS WHICH COMPLY WITH THE OBJECTIVES OF FLOOD PLAIN MANAGEMENT, AND ACCORD WITH THE PROCEDURAL POLICIES ESTABLISHED BY CONSERVATION AUTHORITIES AND THE MINISTRIES OF NATURAL RESOURCES, MUNICIPAL AFFAIRS AND HOUSING AND THE ENVIRONMENT;

THE MINISTRIES OF NATURAL RESOURCES, MUNICIPAL AFFAIRS AND HOUSING, AND THE ENVIRONMENT, IN CO-OPERATION WITH CONSERVATION AUTHORITIES, WILL DEVELOP POLICIES, TECHNICAL GUIDELINES AND PROCEDURES FOR THE PREPARATION AND APPROVAL OF STORMWATER MANAGEMENT PLANS.

This policy clarifies the inter-relationship between urban stormwater management and flood plain management. Construction Regulations* made under The Conservation Authorities Act will not be applied in drainage areas of less than 125 ha. Local municipalities will also be given the opportunity to assume delegated jurisdiction over larger watersheds, regardless of size, once they adopt stormwater management plans which comply with the objectives of flood plain management.

The policy also directs the Ministries of Natural Resources, Municipal Affairs and Housing and the Environment, in co-operation with Conservation Authorities, to develop policies, technical guidelines and procedures for the preparation and approval of stormwater management plans.

*Sec. 28 (1)(e), Conservation Authorities Act, R.S.O. 1980, Ch. 85



Township of Field, 1979

Regulatory Flood Criteria

Figure 1 shows the geographic areas of the province where each of the criteria for the Regulatory Flood is applied. The peak flow generated by the Regional storm is referred to as the "Regional flood".

Zone 1:

For all watersheds within Zone 1 (Figure 1), the Regulatory Flood is the Regional Flood or the 100-Year Flood, whichever is greater. Zone 1 includes, among other lands in Southwestern and South Central Ontario, all watersheds within the areas of jurisdiction of the Conservation Authorities listed below:

- Ausable Bayfield
- Catfish Creek
- Central Lake Ontario
- Credit Valley
- Essex Region
- Ganaraska Region
- Grand River
- Halton Region
- Hamilton Region
- Kettle Creek
- Long Point Region
- Lower Thames Valley
- Maitland Valley
- Metropolitan Toronto and Region
- Niagara Peninsula
- Saugeen Valley
- South Lake Simcoe
- St. Clair Region
- Upper Thames River

In Zone 1, Regional Storm means a storm producing in a forty-eight (48) hour period, in a drainage area of,

- 1 twenty-five (25) km² or less, a rainfall that has the distribution set out in Table 2, or
- 2 more than twenty-five (25) km², a rainfall such that the number of mm of rain referred to in each case in Table 2, modified by the percentage amount shown in Column 2 of Table 3 opposite the size of the drainage area set out opposite thereto in Column 1 of Table 3.

Distribution of Regional Storm Rainfall — Zone 1.

Watershed Area: 25 km² or less

- 73 mm of rain in the first 36 hours
- 6 mm of rain in the 37th hour
- 4 mm of rain in the 38th hour
- 6 mm of rain in the 39th hour
- 13 mm of rain in the 40th hour
- 17 mm of rain in the 41st hour
- 13 mm of rain in the 42nd hour
- 23 mm of rain in the 43rd hour
- 13 mm of rain in the 44th hour
- 13 mm of rain in the 45th hour
- 53 mm of rain in the 46th hour
- 38 mm of rain in the 47th hour
- 13 mm of rain in the 48th hour

TABLE 2

Drainage Area (km ²)	Percentage
26 to 45 both inclusive	99.2
46 to 65 both inclusive	98.2
66 to 90 both inclusive	97.1
91 to 115 both inclusive	96.3
116 to 140 both inclusive	95.4
141 to 165 both inclusive	94.8
166 to 195 both inclusive	94.2
196 to 220 both inclusive	93.5
221 to 245 both inclusive	92.7
246 to 270 both inclusive	92.0
271 to 450 both inclusive	89.4
451 to 575 both inclusive	86.7
576 to 700 both inclusive	84.0
701 to 850 both inclusive	82.4
851 to 1000 both inclusive	80.8
1001 to 1200 both inclusive	79.3
1201 to 1500 both inclusive	76.6
1501 to 1700 both inclusive	74.4
1701 to 2000 both inclusive	73.3
2001 to 2200 both inclusive	71.7
2201 to 2500 both inclusive	70.2
2501 to 2700 both inclusive	69.0
2701 to 4500 both inclusive	64.4
4501 to 6000 both inclusive	61.4
6001 to 7000 both inclusive	58.9
7001 to 8000 both inclusive	57.4

TABLE 3

ZONE 2:

For all watersheds within Zone 2 (Figure 1), the Regulatory Flood is the 100-Year Flood. Zone 2 includes, among lands in Eastern Ontario, all watersheds within the area of jurisdiction of the Conservation Authorities listed below.

- Cataragui Region
- Crowe Valley
- Mississippi Valley
- Moirs River
- Napanee Region
- Raisin Region
- Rideau Valley
- South Nation River

ZONE 3:

For all watersheds within Zone 3 (Figure 1), the Regulatory Flood is the Regional Flood or the 100-Year Flood, whichever is greater. Zone 3 includes, among other lands in South Central and Northern Ontario, all watersheds within the areas of jurisdiction of the Conservation Authorities listed below.

- Kawartha Region
- Lakehead Region
- Lower Trent Region
- Mattagami Region
- Nickel District
- North Bay - Mattawa
- North Grey Region
- Nottawasaga Valley
- Otonabee Region
- Prince Edward Region
- Sauble Valley
- Sault Ste. Marie Region

In Zone 3, Regional Storm means a storm producing in a twelve (12) hour period, in a drainage area of:

- 1 Twenty-five (25) km² or less, a rainfall that has the distribution set out in Table 4, or
- 2 more than twenty-five (25) km², a rainfall such that the number of mm of rain referred to in each case in Table 4, modified by the percentage amount shown in Column 2 of Table 5 opposite the size of the drainage area set out opposite thereto in Column 1 of Table 5.

Distribution of Regional Storm Rainfall — Zone 3.
Watershed Area 25 km ² or less.
15 mm of rain in the first hour
20 mm of rain in the second hour
10 mm of rain in the third hour
3 mm of rain in the fourth hour
5 mm of rain in the fifth hour
20 mm of rain in the sixth hour
43 mm of rain in the seventh hour
20 mm of rain in the eighth hour
23 mm of rain in the ninth hour
13 mm of rain in the tenth hour
13 mm of rain in the eleventh hour
8 mm of rain in the twelfth hour

TABLE 4

Drainage Area (km ²)	Percentage
26 to 50 both inclusive	97
51 to 75 both inclusive	94
76 to 100 both inclusive	90
101 to 150 both inclusive	87
151 to 200 both inclusive	84
201 to 250 both inclusive	82
251 to 375 both inclusive	79
376 to 500 both inclusive	76
501 to 750 both inclusive	74
751 to 1000 both inclusive	70
1001 to 1250 both inclusive	68
1251 to 1500 both inclusive	66
1501 to 1800 both inclusive	65
1801 to 2100 both inclusive	64
2101 to 2300 both inclusive	63
2301 to 2600 both inclusive	62
2601 to 3900 both inclusive	58
3901 to 5200 both inclusive	56
5201 to 6500 both inclusive	53
6501 to 8000 both inclusive	50

TABLE 5

FOR ADDITIONAL INFORMATION:

MINISTRY OF NATURAL RESOURCES

Conservation Authorities &
Water Management Branch
Room 5620, Whitney Block
99 Wellesley Street West
Toronto, Ontario
M7A 1W3

Telephone: (416) 965-6275

FIELD OFFICES:

Central Region

10670 Yonge Street
Richmond Hill, Ontario
L4C 3C9

Telephone: (416) 884-9203

Eastern Region

Government Building, Van Buren Street
Kemptville, Ontario
K0G 1J0

Telephone: (613) 258-3413; 238-7326

Northeastern Region

Ontario Government Buildings
199 Larch Street
Sudbury, Ontario
P3E 5P9

Telephone: (705) 675-4104

North Central Region

435 James Street South, Box 5000
Thunder Bay 'F', Ontario
P7C 5G6

Telephone: (807) 475-1261

Southwestern Region

1106 Dearness Drive
London, Ontario
N6E 1N9

Telephone: (519) 681-5350

Northern Region

140 Fourth Avenue, Box 3000
Cochrane, Ontario
P0L 1C0

Telephone: (705) 272-4287

Northwestern Region

808 Robertson Street, Box 5160
Kenora, Ontario
P9N 3X9

Telephone: (807) 468-3111

Algonquin Region

Box 9000
Huntsville, Ontario
P0A 1K0

Telephone: (705) 789-9611

MINISTRY OF MUNICIPAL AFFAIRS AND HOUSING

Plans Administration Branch
56 Wellesley Street West
Toronto, Ontario
M7A 2K4

Telephone: (416) 965-6418

Community Planning Advisory Branch
56 Wellesley Street West
Toronto, Ontario
M7A 2K4

Telephone: (416) 965-3352

FIELD OFFICES:

Central Region

2nd Floor
47 Sheppard Avenue East
Willowdale, (Toronto)
M2N 2Z8

Telephone: (416) 224-7635

South East Region

3rd Floor
244 Rideau Street
Ottawa
K1N 5Y3

Telephone: (613) 566-3801

North East Region

1191 Lansing Avenue
Sudbury
P3A 4C4

Telephone: (705) 560-0120

South West Region

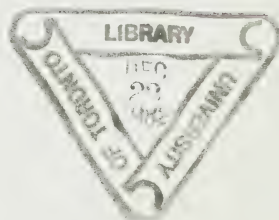
7th Floor
495 Richmond Street
London
N6A 5A9

Telephone: (519) 673-1611

North West Region

435 James Street South
Thunder Bay
P7C 5G6

Telephone: (807) 475-1651







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